

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
7 October 2004 (07.10.2004)

PCT

(10) International Publication Number  
**WO 2004/084928 A1**

(51) International Patent Classification<sup>7</sup>: **A61K 38/17,**  
38/19, A61P 35/00

(21) International Application Number:  
PCT/CA2004/000451

(22) International Filing Date: 25 March 2004 (25.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/458,022 28 March 2003 (28.03.2003) US

(71) Applicant (for all designated States except US): **UNIVERSITÉ LAVAL** [CA/CA]; Cité universitaire, Québec, Québec G1K 7P4 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **TESSIER, Philippe** [CA/CA]; 1056 de St-Sébastien, Cap-Rouge, Québec G1Y 2S5 (CA). **VANDAL, Karen** [CA/CA]; 440, rue Des Champs, Lac St-Charles, Québec G3G 1M7 (CA). **ROULEAU, Pascal** [CA/CA]; 440, rue Des Champs, Lac St-Charles, Québec G3G 1M7 (CA). **RYCKMAN, Carle** [CA/CA]; 1424, boul. Père-Lelièvre, apt. 102, Duberger, Québec G1M 1N9 (CA).

(74) Agent: **OGILVY RENAULT**; Suite 1600, 1981 McGill College Avenue, Montréal, Québec H3A 2Y3 (CA).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: S100 PROTEIN AS NEUTROPHIL ACTIVATOR FOR ALLEVIATING NEUTROPENIA IN CANCER TREATMENT

(57) Abstract: The present invention relates to a method and composition for inducing lymphocyte proliferation and migration, and for reducing the risks of microbial infections in patients immuno-suppressed. The present invention particularly relates to the use of S100 protein, such as MRP, to induce the proliferation, differentiation and release of immune cells from bone marrow. More particularly, S100A8, S100A9, S100A12 and S100A8/A9 are administered to patients with lowered neutrophil blood concentrations.